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Unilateral Competitive Effects Theories in Merger Analysis

by Jonathan B. Baker

Unilateral theories of the adverse competitive effect of mergers have been growing in significance over the past decade at the federal antitrust enforcement agencies. While this change is less dramatic than antitrust's Chicago School revolution, it too constitutes a paradigm shift. This article reviews the rise of the new perspective and describes in detail an example based on an auction model applied at the Federal Trade Commission to analyze the Rite-Aid/Revco merger.¹

Rise of Unilateral Theories

The 1992 Department of Justice and Federal Trade Commission Horizontal Merger Guidelines distinguish between anticompetitive mergers that make it more likely or more effective for firms to coordinate their actions, and anticompetitive mergers that make it profitable for the merging firms to reduce output and raise price unilaterally. Unilateral theories are now by far the most common in the internal analyses of the antitrust enforcement agencies, particularly among agency economists.

This was not always the case. The first Chicago School-era merger guidelines, issued by the Justice Department in 1982, highlighted factors facilitating collusion (§ III.C); that discussion was the predecessor to the current Guidelines' discussion of coordinated competitive effects. Although the 1982 Guidelines also con-

tained a "leading firm proviso" that dealt with the creation or enhancement of the market power of a dominant firm (§ III.A.2), the application of this unilateral theory of potential adverse competitive effects of mergers was very narrow. As late as 1986, the leading survey of antitrust policy issues raised by horizontal mergers essentially ignored unilateral theories.²

Two developments in economics have brought unilateral theories to the fore. The first was a theoretical literature, initiated by Salant, Switzer and Reynolds, that investigated the conditions under which oligopolists would find merger profitable even if the industry members were not coordinating their actions.³ The second was an empirical literature encouraged by the simultaneous development of new econometric tools and computerized point-of-sale scanner data (recording individual transactions at supermarkets and other retail outlets). These tools and data made it possible to identify in many cases the extent to which consumers consider individual products close substitutes; the extent to which, in consequence, individual products constrain the pricing of rivals; and the extent to which mergers encourage higher prices by removing those constraints.⁴

The 1992 Horizontal Merger Guidelines recognize these economic developments by setting forth several ways in which mergers may "less[en] competition through unilateral effects" (§ 2.2). The settings in which this may occur include two in which competition is localized—a spatial location model of competition among sellers of differentiated products (§ 2.21) and an auction model variant (§ 2.21 n.21)—and a third in which firms sell homogeneous products and are distinguished primarily by their capacities (§ 2.22). The localized competition theory of competitive effects of mergers among sellers of differentiated products may be the most familiar,

because it is usually the basis for the analysis of mergers among sellers of branded consumer products. (See box.)

Mergers in an Auction Model

The Rite Aid/Revco merger illustrates one unilateral theory of adverse competitive effects from merger, an auction model that may be thought of as a variant of the homogeneous product story told in the 1992 Merger Guidelines.⁵ The auction setting highlights the possibility that firms selling indivisible goods, and unable to expand output because of capacity constraints, may be able to induce price increases by making "all-or-nothing" offers—a possibility not noted in the 1992 Guidelines.

One way to tell the story is with a numerical example.⁶ The example assumes that the goods are indivisible and that selling firms are capacity constrained, forcing a buyer to purchase from multiple sellers. If one seller gains control over what had been two sellers' resources, the merged firm may be able to engineer a higher price by making the buyer an all-or-nothing offer for the output of its now-larger capacity. The reason is that if the buyer were to reject the all-or-nothing offer, it might find it necessary to go deeper into its list of alternative suppliers to replace the merged firm. If the buyer's alternatives grow less attractive because of differences among sellers (seller heterogeneity), the seller's bargaining leverage is enhanced and a higher price may result.

In particular, consider a market with ten sellers, where each produces exactly one unit. The goods are indivisible: a seller cannot produce a partial unit. This assumption is often reasonable: it is typically hard to sell part of a hospital or part of a brand name, for example.⁷ Because the selling firms are capacity constrained, an individual buyer seeking multiple units must purchase from multi-

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ple sellers. All firms' products are identical, but the sellers differ—in the example, they have different production costs.⁸ The first seller produces its unit at a marginal cost of one, the second seller at a marginal cost of two, and so forth, so the tenth seller has a cost of ten.

Now suppose that a buyer needs seven units of the good, but has little or no use for more.⁹ The buyer asks all sellers to bid to supply any or all of the seven units it needs, and pays the same price to all sellers whose bid it accepts.¹⁰ In the most plausible auction models,¹¹ the buyer will purchase one unit from each of the first seven firms, which are the lowest cost suppliers, and pay a price of eight (or just under) for each unit. No seller can induce the buyer to pay more than eight, because the buyer has the option of turning to the eighth firm, which is just willing to produce and sell for a price of eight.¹² The total paid by the buyer is 56.

The potential for firms to engineer a price rise by making an all-or-nothing offer is demonstrated when any two of the seven lowest-cost sellers merge. To make the example concrete, assume that the merger involves the first two sellers, which happen to be the two lowest cost producers. After the merger, the combined one/two firm offers the buyer two units at a price of (just under) eighteen for the package. This is equivalent to demanding that the buyer acquire two units and pay a price (just under) nine for each. The buyer's best option for purchasing the seven units it needs is to accept that offer and obtain the other five units it requires from firms three through seven. The buyer obtains the seven units it demands from the seven lowest cost sellers, which include the merged firm, and pays a price of (just under) nine for each. As all sellers receive the higher price, the per unit price rises from eight to nine and the total paid by the buyer increases from 56 to 63.

The reason the price goes up is that the buyer's alternatives, if it refuses an all-or-nothing offer from the merged firm, are less attractive than they were before the merger.¹³ After the merger, if the buyer turns down the all-or-nothing offer from the combined firms one and two, it can no longer merely turn to a seller with a cost of eight; the buyer's best alternative is now to buy from both the eighth and ninth

firms. Because one of these producers has a cost of nine, the buyer would have to pay a price of nine to every seller.¹⁴ Accordingly, the merged firm can extract a per unit price of (just under) nine through an all-or-nothing offer to the buyer.¹⁵

Two features of this example are critical to generating the price increase. First, the available units exceed what the buyer needs. In consequence, what the firms produce are substitutes to the buyer,¹⁶ making the transaction a horizontal merger among the sellers of substitutes. Second, the ninth firm's output is less attractive to the buyer than the eighth firm's; in the example, it costs more to produce. This makes the buyer's alternatives worse when the merged firm makes an all-or-nothing offer, compared to the buyer's alternatives to dealing with the first firm before the merger. If instead, for example, the ninth firm were identical to the eighth firm and could also produce at a cost of eight, the merged firm could not induce the buyer to sell to it at a price above eight by making an all-or-nothing offer.¹⁷

In the numerical example—characterized by product indivisibilities, seller capacity constraints, and a rigid buyer "need" requirement—the surplus that the seller extracts through all-or-nothing offer is a pure transfer from the buyer. In settings where the seller has some ability to restrict output or lower quality, and the buyer has some ability to reduce its purchases in response to a price increase, however, the merger could also be expected to generate an efficiency loss. On the other hand, if the merged firm can credibly make all-or-nothing offers, it may also be able to expand output through volume discounts, multipart pricing, or other complex pricing schemes, and thereby potentially create an efficiency gain to weigh against that efficiency loss.

As with other unilateral theories of adverse competitive effect from the merger of firms selling demand substitutes, this story shows how the loss of seller competition makes a buyer's best alternative to dealing with a seller less attractive, leading the buyer to pay a higher price. The novelty here comes from marrying product indivisibilities and seller capacity constraints with the auction model. In the auction model mentioned in the

Merger Guidelines, only mergers involving the marginal excluded firm, firm eight in the example, would raise price by making buyer's alternatives less attractive. Here, in contrast, mergers among infirmarginal sellers, such as firms one and two, can create market power.

The Rite Aid/Revco Merger

This theory helps explain why the Rite Aid/Revco merger appeared to create a competitive problem. The merger involved two large operators of retail pharmacies in the United States, each with a substantial market share in numerous metropolitan areas. The Federal Trade Commission was concerned that the combined firm would be able to exercise market power in the sale of retail pharmacy services to managed care providers offering pharmacy benefits and to their enrollees. Previous drug store mergers investigated by the Commission had not involved consolidations of this scope and had not found problems in the sale of pharmacy services to managed care; the earlier investigations had uncovered a potential for raising drug prescription prices to cash customers only.

The competitive problem can be shown through a hypothetical example involving a Blue Cross plan that seeks to put together a pharmacy network in a major metropolitan area. Blue Cross needs to contract with a pharmacy network in order to provide drug benefits to those covered by its health care plan. It wants to market the health plan to major employers in the local area, and needs to tell plan enrollees what pharmacies they can go to in order to fill their prescription. Blue Cross must pay the pharmacies by the prescription to perform that service.

Both Blue Cross and the pharmacies see a tradeoff between a large network and a small one. This tradeoff is fundamentally between convenience and price. A large network, containing most of the pharmacies in town, will allow virtually all plan enrollees—individual consumers—to obtain their prescriptions at a convenient location. This makes the plan attractive to enrollees and employers and, for that reason, profitable for Blue Cross and the pharmacies in its network.¹⁸ But a small network, one containing only a fraction of the pharmacies in the metropolitan area, gives each member pharma-

Mergers Among Sellers of Differentiated Products

The localized competition theory of competitive effects of mergers among sellers of differentiated products set forth in the 1992 Merger Guidelines (§ 2.21) is perhaps the most commonly employed unilateral story. To illustrate it, consider a merger in a hypothetical breakfast cereal industry. Suppose the Crunchy Cereal Co., which makes the Crunchies brand, seeks to acquire the Fruity Cereal Co., maker of Fruities. To simplify the example suppose, at variance with the real breakfast cereal industry, that each firm sells only one brand and that firms promote their brands exclusively through national advertising (and not by discounting prices at supermarkets).

Before the merger, Crunchies sells for \$2.00 per standard-sized box. Once the fixed costs of manufacturing, distribution, and advertising are accounted for, an additional cereal box costs \$1.10 to produce and sell. If the price were to rise to \$2.10, suppose further, Crunchies would lose 10 out of every 100 unit sales.¹ Quantity sold declines because some customers buy fewer Crunchies than before, some substitute other breakfast cereals, and some do without cereal altogether.

With these assumptions, the manufacturer would not be able to increase profits by raising the Crunchies price. In making that determination, the company balances the cost of lost sales against the gain from higher price-cost margins. On the cost side, the company loses a contribution margin (price less marginal cost) of \$0.90 on 10 out of every 100 premerger purchases, for a total loss of \$9.00. Against that loss, Crunchies would gain an additional \$0.10 profit on the 90 out of every 100 purchases it keeps, for a gain of \$9.00 per 100 units sold premerger. Because the gain from raising price (\$9.00) does not exceed the cost (also \$9.00), the firm does not increase its price.²

The merger can alter this calculus, making profitable an increase in the Crunchies price. Of the 10 unit sales out of every 100 lost were the Crunchies price to rise to \$2.10, suppose that 3 would go to Fruities.³ For those customers, Fruities is the closest substitute for Crunchies at current prices. Suppose further that the price of Fruities is \$0.80 more than the marginal cost of producing more. (For example, Fruities may sell for \$2.10 and cost \$1.30.) If Crunchies acquires Fruities before raising price to \$2.10, Crunchies gains the benefit of diverting some Crunchies sales to another brand, Fruities, that it now also owns. On the 3 out of every 100 Crunchies units sold premerger that become Fruities sales, the merged firm earns a profit of \$0.80 per unit, for a total gain of \$2.40 per 100 Crunchies units sold premerger. Accordingly, it is now profitable to increase the Crunchies price to \$2.10.

Why does the merged firm want to increase the price of Crunchies? Before the merger, the Crunchies price was held in check by the collective presence of competition from those rival brands, including Fruities, that were the second choice for a significant fraction of consumers. But with the merger, Crunchies no longer is concerned about the diversion of some buyers to Fruities. Thus, the merger removes Fruities as a constraint on Crunchies pricing. For similar reasons, the merger may also give the merged firm an incentive to increase the price of Fruities.

The example also suggests the importance of product repositioning as a force tending to undercut the profitability of a post-merger price increase. Oaties may respond to the Crunchies price rise by adding Crunchy Oaties and Fruity Oaties to its product line, or by stepping up promotion of those brand extensions if they already exist.⁴ As a result,

more than 10 out of 100 Crunchies customers could switch away in response to a Crunchies price increase, and most of the switchers who formerly saw Fruities as their second choice may choose an Oaties product instead. If so, it may no longer be profitable to increase the price of Crunchies after the merger.

Efficiencies from the merger may also counteract the incentive to raise price. For example, Crunchies and Fruities together may be able to achieve substantial scale economies in promotion and distribution. If the marginal cost of producing Crunchies were to decline sufficiently, the post-merger price could fall notwithstanding the loss of direct competition between the two brands.

The example also helps clarify the way econometric estimates of demand elasticities relate to this competitive effects theory. Econometric studies in effect offer a way of determining the two most critical numbers in the example: the fraction of customers (10 out of 100) who would no longer purchase Crunchies were the price to rise a small amount, and the fraction of those (3 out of 10) who would switch to Fruities.⁵ With the addition of accounting estimates of the price and marginal cost of Crunchies and the price-cost margin for Fruities, the methodology of the example could be applied to determine the profitability of a small increase in the price of Crunchies. That profit increase (in the example, 1.2% of premerger revenues) provides one indicator of the strength of incentives to raise the price of Crunchies.

Simulation methods take one step more: they compute the profitability of all possible price changes for both Crunchies and Fruities (simultaneously), and identify which is the most profitable.⁶ The resulting projected post-merger prices provide an alternative indicator of the strength of incentives to increase price that takes into account the interrelationship between the demand for the two products. To make such computations, it is necessary to estimate how the fraction of customers who would no longer purchase Crunchies, and the share of those who would switch to Fruities, changes with different potential price increases (such as a rise in the Crunchies price to \$2.20 or \$2.40 as well as to \$2.10). This amounts to estimating how the own- and cross-price demand elasticities change with movements along the demand functions. In addition, this computation requires information about the way marginal cost varies with changes in output, and information about the way the sellers of other brands will react to price increases by the merged firm. ●

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¹ If a 5% increase in price induces a 10% reduction in the quantity sold, the own price elasticity of demand is -2.

² Nothing of consequence in the example would change were the variable costs of production \$1.099 per box, so that the price of \$2.00 is strictly more profitable than the price of \$2.10.

³ The Crunchies-Fruities merger can lead to a price rise regardless of the brand chosen by the remaining 7 out of every 100 Crunchies customers who stop purchasing Crunchies but do not divert to Fruities. All 7 may switch to Oaties, or 2 may pick Oaties and the rest divert to other breakfast foods; the competitive effects analysis would not change.

⁴ The 1992 Merger Guidelines (§ 2.212 n.23) test the timeliness and likelihood of repositioning responses with the same methodology as is used in analyzing entry.

⁵ The first number is related to the own elasticity of demand for Crunchies, and the second is related to the cross-elasticity of demand between the merging brands. Carl Shapiro has termed the second fraction a "diversion ratio." Carl Shapiro, *Mergers with Differentiated Products*, ANTITRUST, Spring 1996, at 23.

⁶ See generally Gregory J. Werden, *Simulating Unilateral Competitive Effects from Differentiated Products Mergers*, *infra* this issue at 27; Jonathan B. Baker, *Contemporary Empirical Merger Analysis*, 5 GEO. MASON L. REV. (forthcoming 1997).

cy more business. In exchange for that benefit, the pharmacy may be willing to accept a lower per-prescription payment from Blue Cross, thereby reducing Blue Cross's costs and allowing Blue Cross to lower the price of the drug benefits plan to employers and enrollees.

In the hypothetical drug plan example, Blue Cross has found that most employers, looking at the price reductions made possible by reducing the scope of pharmacy networks, resolve the tradeoff largely in favor of convenience. Accordingly, Blue Cross believes it must include, let us say, at least 60 percent of the drug stores in town, distributed across all neighborhoods, in order to offer a drug plan it can successfully market to employers.¹⁹ All pharmacy counters are not equally attractive to Blue Cross, however. On average, Blue Cross prefers pharmacy counters located in stores that are part of a large chain over pharmacies in small chains, and it prefers chain store

pharmacies to independents.²⁰ Some of the independent stores may be as attractive to Blue Cross as some of the chain stores, but many of the independent stores are unattractive.

Blue Cross effectively conducts an auction, seeking bids from pharmacies for the payment they would require to join Blue Cross's network. The setting reasonably tracks the auction model we have been discussing. An individual drug store is limited to a single location, thus creating both an indivisibility and the equivalent of a capacity constraint from the point of view of Blue Cross seeking to put together a network of pharmacies at multiple locations. Seller heterogeneity creates the equivalent of marginal cost variation across pharmacy counters: chain store pharmacies tend to be like the low cost sellers in the numerical example by virtue of their greater attractiveness to Blue Cross, where cost is conceived of in terms of providing retail pharmacy ser-

vices to Blue Cross at a given level of quality.

Blue Cross does not negotiate with pharmacy chains for store-by-store participation in its pharmacy network; it negotiates chain-by-chain. So suppose, again hypothetically, that in some metropolitan area Rite Aid accounts for 25 percent of the pharmacy counters and Revco accounts for 10 percent. Eight other chains each control 5 percent of the pharmacy counters, and the remaining 25 percent are found in individually owned stores.²¹

Blue Cross's ability to negotiate a low price with Rite Aid turns on the nature of its alternatives. Before the merger, when Blue Cross informally seeks bids from drug store chains to join its network, it views Rite Aid as making an all-or-nothing offer for 25 percent of the pharmacy counters in town. Without Rite Aid, it could put together a network with 60 percent coverage by contracting with Revco, the eight small chains, and some of the better independents. It needs less than half the independents to do so. After the merger, Rite Aid would make an all-or-nothing offer involving 35 percent of the area's pharmacy counters. Blue Cross's alternatives for doing without Rite Aid would then be significantly worse; to avoid dealing with the merged firm, Blue Cross must go deeper into the group of sellers it would previously have rejected. To reach 60 percent coverage without Rite Aid, it must include most of the independent pharmacies, including some of the least attractive ones. Recognizing this, Rite Aid can successfully hold out for a higher price than it would have received before the merger, and the price Blue Cross must pay rises.

This is not a theory that automatically makes any drug chain merger illegal. Some of the counter-arguments Rite Aid might make, assuming factual support, would apply to protect any merger from antitrust challenge by government enforcers, regardless of the competitive effects theory. These include proof that post-merger concentration is within Merger Guidelines safe harbors based on market shares, that entry would solve the competitive problem,²² that efficiencies would lead the merged firm not to raise price, or that efficiency benefits from the deal outweigh any harm to competition.

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Other possible arguments for the parties come from the framework of the auction model.²³ The parties might demonstrate that Blue Cross's alternatives do not get worse following this merger. For example, they might show that most of the independent pharmacies are about as attractive to Blue Cross as the small chains. If so, the merged firm could not obtain more bargaining leverage in dealing with Blue Cross by framing a larger all-or-nothing offer than Rite Aid had made premerger.²⁴

Or the parties might demonstrate that in response to the anticompetitive potential of this merger, enough of the least attractive independents would find it worthwhile to make themselves more desirable to Blue Cross—and thus prove that repositioning by non-party rivals would solve the competitive problem.

Or the parties might show, contrary to what the hypothetical example assumed, that Blue Cross and its enrollees find a network with 60 percent coverage equally attractive as a network with, let us say, 30 percent coverage (after consideration of the lower price for prescription drugs that a smaller network could make possible).²⁵ If so, Blue Cross's alternatives to dealing with Rite Aid do not get worse with the merger. Blue Cross retains the post-merger alternative of putting together a smaller network composed only of chain stores, all from the smaller chains, without need for including any of the unattractive independents.

The model of auctions with product indivisibilities and capacity constraints does not apply only to pharmacies. For example, it may explain why a cable tele-

vision programming merger placing a leading news channel under common ownership with a leading movie channel could raise the price of programming to cable system operators²⁶—even if most viewers do not consider the two channels to be substitutes.²⁷

Suppose there are ten “marquee” cable networks, and a cable system needs to carry at least seven out of the ten in order to attract a significant number of subscribers. Then the marquee networks would be substitutes in filling the cable system’s “must have” slots. But some marquee networks may be more attractive to the cable system than others. Then an all-or-nothing offer including two or more relatively attractive networks, made credible by merger, may permit the programmer to extract a higher price from the cable system operator by making the cable system’s alternatives to dealing with those networks worse than they were before the merger.²⁸

The Role of Market Definition

In the auction example, the market was not highly concentrated, yet a small increase in concentration led to a substantial price increase.²⁹ The price rose substantially because the buyer did not have a good alternative to accepting the merged firm’s all-or-nothing offer. The merged firm’s negotiating leverage depended upon the attractiveness of the buyer’s next best alternative premerger, relative to the next best alternative after the merger, not upon concentration in the market as a whole. Similarly, small increases in concentration can generate higher prices in the localized competition

model of mergers among sellers of differentiated products (*see box*). The reason: two brands may be close substitutes even if both have low market shares.

In short, market shares may not capture all the factors relevant to assessing unilateral incentives to raise price following merger. Under such circumstances, concentration measures may perform poorly in identifying the mergers most likely to harm competition.

To the extent these unilateral theories are best demonstrated though evidence other than market concentration and its increase, market definition has limited importance in analyzing a merger. Indeed, if the likely harm to competition is shown with evidence not involving market shares, there is little need to specify the precise boundaries of the market within which that harm will occur.³⁰

Yet, even when market shares are not strongly probative, merger analysis will depend upon identifying the sellers of close substitutes. The auction example presumed knowledge of the identity of the rival bidders and their relative attractiveness. Similarly, econometric methods of estimating the fraction of the acquiring firm’s customers that see the acquired firm’s products as their second choice—a critical input for determining the strength of post-merger incentives to raise price—may produce erroneous results if some close substitutes are omitted from the analysis. Accordingly, one outcome of the market definition process, the identity of the sellers of close substitutes, remains important even when another outcome, market shares, contributes little to merger analysis. ●

¹ *FTC Will Seek to Block Rite Aid/Revco Merger*, *FTC News*, Apr. 17, 1996; *Rite Aid Abandons Proposed Acquisition of Revco After FTC Sought to Block Transaction*, *FTC News*, Apr. 24, 1996.

² See ABA ANTITRUST SECTION, MONOGRAPH NO. 12, HORIZONTAL MERGERS: LAW AND POLICY 254 n.1300 (1986).

³ Stephen W. Salant et al., *Losses from Horizontal Merger: The Effects of an Exogenous Change in Industry Structure on Cournot-Nash Equilibrium*, 98 Q.J. ECON. 185 (1983). Later contributions include Raymond Deneckere & Carl Davidson, *Incentives to Form Coalitions with Bertrand Competition*, 16 RAND J. ECON. 473 (1985); Martin K. Perry & Robert H. Porter, *Oligopoly and the Incentive for Horizontal Merger*, 75 AM. ECON. REV. 219 (1985); Joseph Farrell & Carl Shapiro, *Horizontal Mergers: An Equilibrium Analysis*, 80 AM. ECON. REV. 107 (1990).

⁴ E.g., Jonathan B. Baker & Timothy F. Bresnahan, *The Gains from Merger or Collusion in Product-Differentiated Industries*, 33 J. INDUS. ECON.

427 (1985); Steven Berry & Ariel Pakes, *Some Applications and Limitations of Recent Advances in Empirical Industrial Organization: Merger Analysis*, 83 AM. ECON. REV. 247 (Papers & Proceedings May 1993); Jerry Hausman et al., *Competitive Analysis with Differentiated Products*, 34 ANNALES D'ECONOMIE ET DE STATISTIQUE 159 (1994); Gregory J. Werden & Luke M. Froeb, *The Effects of Mergers in Differentiated Products Industries: Logit Demand and Merger Policy*, 10 J.L., ECON. & ORG. 407 (1994). Some issues arising in the application of econometric tools to merger analysis are discussed in Jonathan B. Baker, *Contemporary Empirical Merger Analysis*, 5 GEO. MASON. L. REV. (forthcoming 1997).

⁵ The most closely related theoretical analysis may be Justice Department economist Gregory Vistnes's examination of how an alliance among multiple hospitals within the same market can profitably raise prices charged health insurers. Gregory Vistnes, *Strategic Alliances and Multi-Firm Systems* (Oct. 1995) (unpublished manuscript). Deneckere & Davidson, *supra* note 3, and Perry & Porter, *supra* note 3, had previously highlighted

- the importance of constraints on the ability of non-merging rivals to expand, such as capacity constraints or product differentiation, in making it profitable for merging firms to reduce output and raise price unilaterally.
- ⁶ This example was created by Professor Robert Hansen of Dartmouth's Amos Tuck School of Business Administration.
- ⁷ In some cases quality reduction could be understood as a form of doing so, however.
- ⁸ The analysis would be similar if the products cost the same to produce, but differed in attractiveness to the buyer. Then, from the point of view of the buyer, the quality-adjusted cost would effectively vary in a way similar to what is postulated in the example in the text. Under either interpretation, the model combines product homogeneity with differences among sellers that lead to differences in their costs of providing the product to any given buyer.
- ⁹ The buyer needs 7 units in the sense of having a very high willingness to pay for each. Matters would not change much if buyer would be willing to buy more than 7 units so long as the price is no higher than that charged for the first seven.
- ¹⁰ Although the setting is an auction, it differs from the auction model mentioned in the Merger Guidelines because the products are homogeneous and each seller's capacity is constrained. The example assumes that the auction is "simultaneous" rather than sequential, that sellers' costs are public information, and that all sellers receive the identical price per unit. These assumptions highlight the logic of the theory. Similar results would likely obtain if the auction is sequential, sellers' costs are private, or buyers can pay sellers' discriminatory prices. The example also assumes that the auction is not repeated.
- ¹¹ This result would arise, for example, in a sealed-bid, second-price model.
- ¹² None of the low cost sellers can extract more from the buyer (nor divert to itself any of the payments buyers make to other sellers) by announcing that unless the buyer pays it more than eight, it will not join the auction. Premerger, such an announcement would not be credible in the postulated auction setting.
- ¹³ Before the merger, each seller made an all-or-nothing offer to the buyer for its sole indivisible unit in a nontrivial sense. That is, the merger could generate a price increase if capacity-constrained sellers capable of producing multiple units make all-or-nothing offers premerger—if the sellers credibly present buyers with a supply schedule giving a price for various combinations of units sold—and if the merged firm can make a larger all-or-nothing offer than could any firm premerger.
- ¹⁴ If the buyer were to conduct an auction among the remaining firms (3 through 10) to buy the 7 units it needs, ignoring the merged firm rather than using the alternative of buying from firms 8 and 9 to limit the bargaining leverage of the merged firm, the buyer would pay an even higher price per unit, of 10.
- ¹⁵ In the example, the merged firm would not find it profitable to raise price unless it can forbid the buyer from choosing to purchase one, but not two units, from it. The reason is that the merged seller would lose more from not selling the second unit than it would gain by raising price on the unit it does sell. Were the merging firms instead high cost sellers, so that the forgone contribution margin on the unit not sold is small, it could be profitable for the merged firm to permit the buyer to purchase only one unit, though not as profitable as insisting on an all-or-nothing offer.
- ¹⁶ Once the buyer has chosen its first 6 suppliers, all remaining suppliers are competing to sell the seventh unit the buyer requires. If the buyer needed all 10 units available in the market, the output of the sellers would be complements rather than substitutes from the perspective of the buyer.
- ¹⁷ The steeper the slope of the supply curve the buyer faces in the neighborhood of the number of units it needs—a possible consequence of seller heterogeneity—the greater the price increase likely to result from a given merger.
- ¹⁸ If the Blue Cross plan attracts more enrollees, each pharmacy in the network will be able to fill more prescriptions. Not only that, people walking into the drug store to fill prescriptions tend to buy other products. Health plans generally do not insist on exclusivity, so the pharmacies would not be forced to drop other networks in order to participate in Blue Cross's network.
- ¹⁹ Nothing significant in the story changes if, after making a deal with 60% of the stores, Blue Cross takes on any other pharmacies that choose to join the network on the same terms. When a stock exchange specialist "cleans up the book," it effectively conducts an auction in a similar way.
- ²⁰ Chain stores tend to have features that make them attractive to consumers—better service, broader merchandise stock, lower prices, convenient location, better parking, and the like—and thus make them attractive to Blue Cross. Chain stores also tend to have features that make them attractive to Blue Cross directly, such as computerized drug inventory management.
- ²¹ All the stores of any given level of attractiveness to Blue Cross—whether large chain stores, small chain stores, the better independents, or the less desirable stand-alone stores—are distributed throughout the area in roughly the way the population is distributed. This assumption, and the assumption that each pharmacy counter is capable of filling any prescription, make outlet counts a reasonable measure of competitive significance in the hypothetical example.
- ²² For example, in response to this merger Blue Cross might encourage a group of good independent stores to affiliate with a pharmacy chain not presently serving the metropolitan area. With Blue Cross's pharmacy business assured, moreover, the new chain might find it attractive to open additional stores.
- ²³ Rite Aid might also highlight drug chain uncertainty about rival chain bids to Blue Cross. Such uncertainty probably reduces the competitive harm from merger without eliminating it, however.
- ²⁴ In terms of the numerical auction example set forth above, this is like demonstrating that the eighth and ninth firms both have costs of 8.
- ²⁵ In terms of the auction example set forth above, it is as if the government claims that Blue Cross needs 7 units while Rite Aid insists that Blue Cross needs only 3 units. If health plan enrollees are not indifferent, but prefer the network with 60% coverage (as the hypothetical example presumed), and if Blue Cross responds to the merger by shrinking its network to 30% coverage in order to keep drug prices from rising, that response would reduce enrollee convenience without lowering price, and thus constitute harm to competition. The possibility that Blue Cross might seek to evade anticompetitive price increases in retail markets for prescription drugs by substituting a mail order network for a retail network with 60% coverage would be analyzed similarly.
- ²⁶ See *FTC Requires Restructuring of Time Warner/Turner Deal, Settlement Resolves Charges that Deal Would Reduce Cable Industry Competition*, FTC News, Sept. 12, 1996; *FTC Gives Final Approval to Time Warner/Turner Deal*, FTC News, Feb. 7, 1997.
- ²⁷ Robert Willig has suggested another way a news channel and a movie channel could be substitutes from the perspective of the cable system operator even if they are not substitutes to most viewers: if the same group of viewers happen to find both channels very attractive, the two channels might then be alternatives for inducing those viewers to become cable system subscribers.
- ²⁸ The movie channel and news channel need not formally tie their products in order to make an all-or-nothing offer by the merged firm credible. Even if the two channels continue to be priced independently and marketed through separate sales forces, their independent negotiations with a cable system operator will have the effect of an all-or-nothing offer if each channel offers tougher terms to those cable systems that do not carry the affiliated channel. And to the extent cable systems that lose marquee networks lose subscribers, that result could be accomplished without acknowledging the informal tie through a price schedule giving discounts to cable systems with high market penetration.
- ²⁹ In the example, a merger creating a firm owning 20% of the market, and increasing the HHI from 1000 to 1200, led to a price increase of 12.5%.
- ³⁰ For a discussion of how to harmonize this observation with the language of Clayton Act § 7, which many read to require a court to identify the product and geographic market within which competition would be harmed, see generally Jonathan B. Baker, *Product Differentiation Through Space and Time: Some Antitrust Policy Issues*, ANTITRUST BULL. (forthcoming 1997).